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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/727,530

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Young-hoon Sung

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EXAMINER

RAHMJOO, MANUCHER

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

07/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/727,530

Applicant(s)

SUNG ET AL.

Examiner

Mike Rahmjoo

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 16-20 and 36-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9, 15, 21-23, 29 and 35 is/are rejected.
- 7) ☒ Claim(s) 4-8, 10-14, 24-28 and 30-34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/7/06, 1/25/06, 4/15/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,21,9,29,15,35 are rejected under 35 U.S.C. 102(e) as being anticipated by Center, JR. (US PAP 2003/ 0059124), hereinafter, Center.

As per claims 1 and 21, and as to the broadest reasonable interpretation by examiner, Center teaches (a) initializing parameters used for a user detection (e.g., the multitude of stages using image acquisition device 10) corresponding to for example [0036];

(b) determining a current mode (motion or static image detection) corresponding to for example [0041] and [0059];

(c) when it is determined that the current mode is the face detection mode, performing a face detection on each of a plurality of image frames, and when a face is not detected even after a predetermined number of face detection trials, selecting a

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motion detection mode and going back to step (b) corresponding to for example the abstract and [0041] wherein motion detection determination is made via subtle changes in pixel values, such as luminance values and [0058] wherein motion detection in ROI (region of interest) corresponding to the head;

and (d) when it is determined that the current mode is the motion detection mode, performing a motion detection on a predetermined number of image frames at a time, and when at least a predetermined number of motion detections are performed successfully within a predetermined period of time, going back to step (a) corresponding to for example [0041] wherein motion detection in light many frame attributes are made; said motion detection is performed to the ROI real time in [0058].

As per claims 9 and 29 Center broadly teaches performing the motion detection using a temporal edge detection algorithm corresponding to for example [0051] wherein erosion operation is used for edges for the ROI.

As per claims 15 and 35 Center broadly teaches interrupting the motion detection with a predetermined period and then performing a face detection corresponding to for example [0041] wherein a differencing function is used for pixel variations.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2- 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over \*\*\*.

As per claim 2 Center does not teach detecting a face candidate region using a Gabor wavelet transformation.

Matsugu teaches detecting a face candidate region using a Gabor wavelet transformation corresponding to for example [0047- 48].

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings of Matsugu into Center to provide pattern recognition processing capable of efficiently performing recognition using a small-scale circuit for detecting (recognizing) a pattern of a predetermined category and size and therefore provide pattern recognition processing capable of detecting an object in a highly reliable fashion corresponding to for example [0013- 15].

As per claim 3 Matsugu broadly teaches detecting a face using a low-resolution support vector machine (SVM) and a high resolution SVM (e.g., another multiple resolution processing method) corresponding to for example [0047].

***Allowable Subject Matter***

Claims 4,10,24, 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 5-8, 11-14,25-28 and 31-33 depend on claims 4,10,24 and 30 with allowed subject matter and would therefore be allowed.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 6834115

US Patent 6917703

US Patent 7050655

US PAP 2002/ 0118195

### Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Rahmjoo whose telephone number is 571-272-7789. The examiner can normally be reached on 8 AM- 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Rahmjoo

July 12, 2007



MATTHEW C. BELLA  
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